# User Manual

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# 4-PORT VGA EXTENDER/SPLITTER [with/without audio]







Model:
NS121UTP
NS121UTPA

# Table of Content



Please read this manual thoroughly and follow the **Installation** procedures to prevent any damage to the KVM switch or any connecting device.

## ---------------- *Introduction*

The **"VGA CAT5 Extender"** pair enables you to transmit VGA signals up to 150M (500 ft.) away with resolution up to 1024 x 768. Featuring common mode noise suppression circuit for superb VGA quality via inexpensive unshielded twisted pair CAT5 cables. The Local unit duplicates the input signal for local use and transmits the VGA signal to a Remote unit. Upon receiving the VGA signal via a CAT5 connector, the Remote unit broadcasts the signal to two VGA outputs. A convenient Gain (equalization) control selector on the Remote unit is designed for optimum signal clarity according to the length of the CAT5 cable.

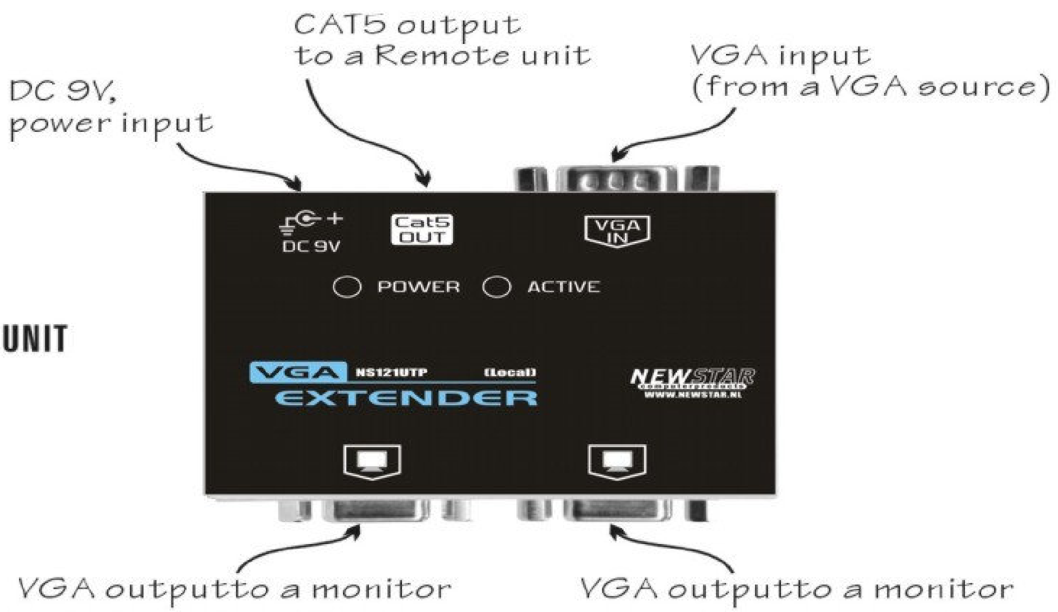
The **"VGA + Audio CAT5 Extender"** has all the functions of the "VGA CAT5 Extender" with an added feature for audio signal.

Both pairs are ideal for public broadcasting, exhibits, retail stores, courtrooms, stock tickers, bus station and many more applications.

# ----------------- *Product Description*

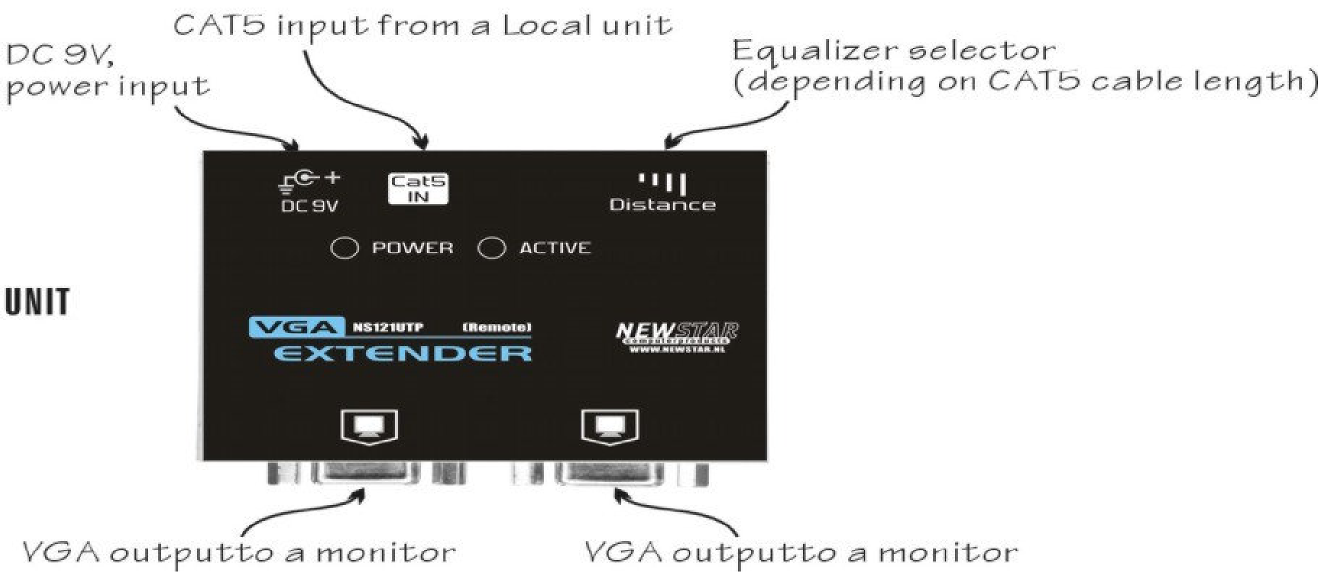
## VGA CAT5 Extender Pair

**LOCAL UNIT**

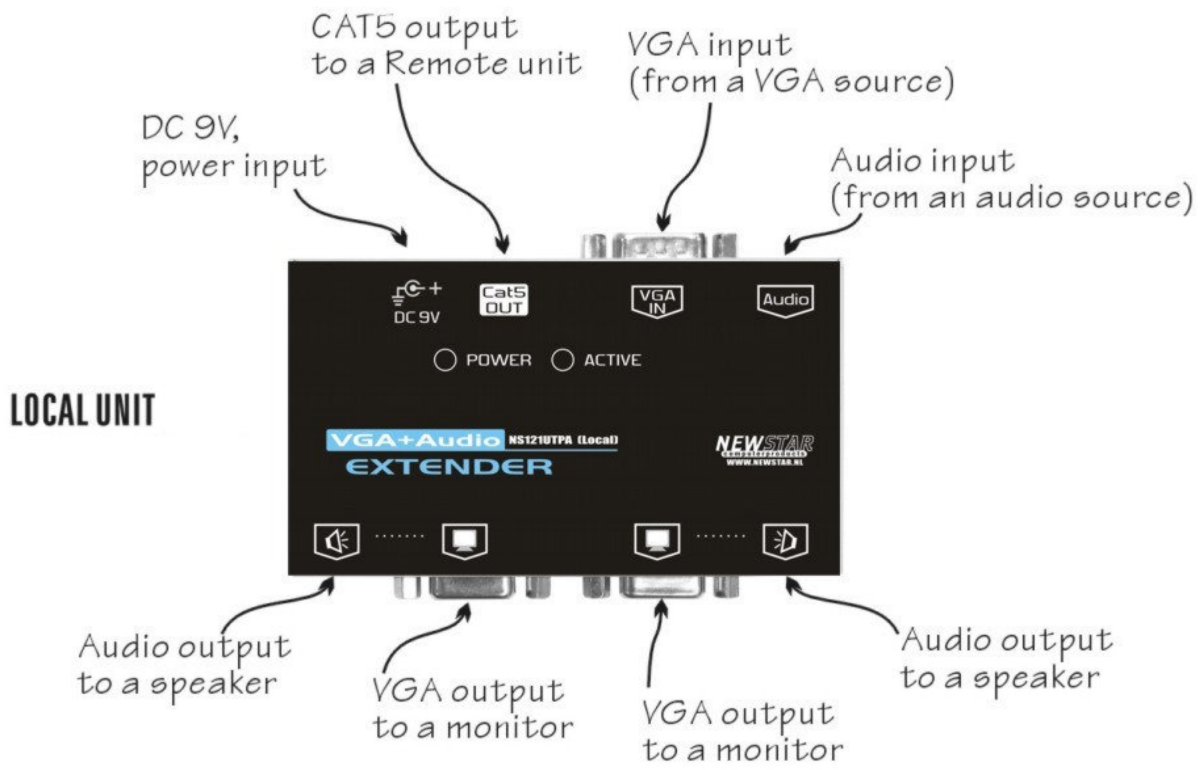


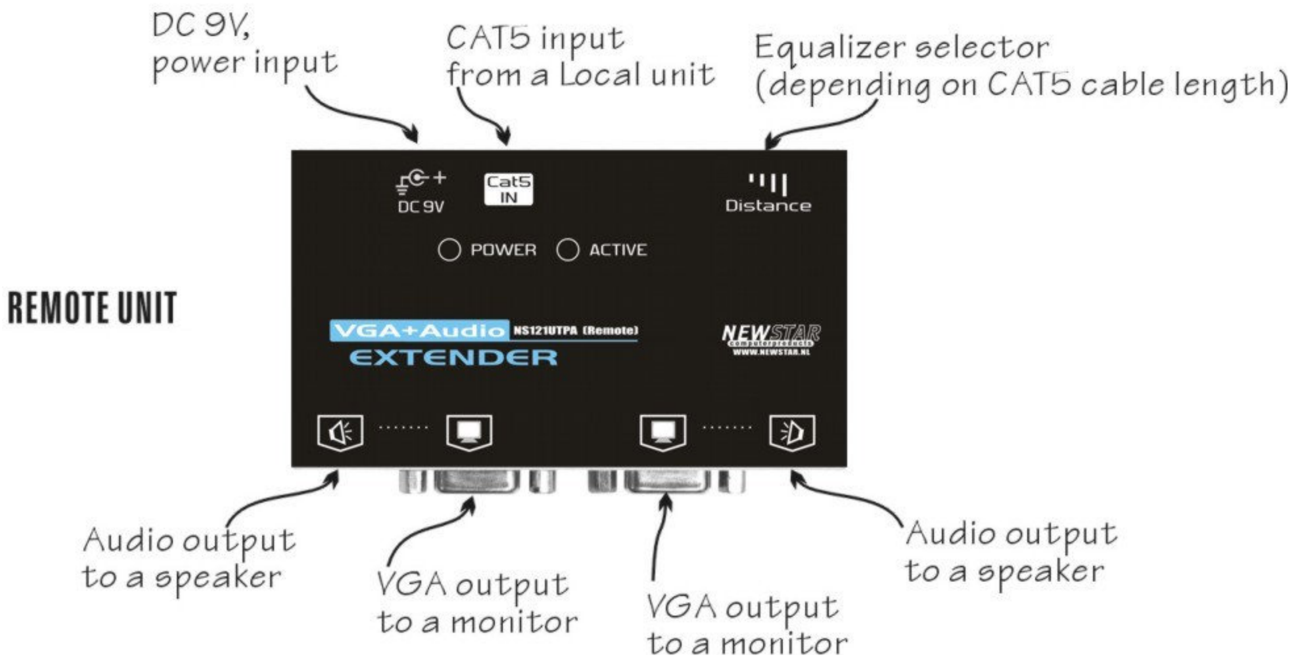

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**REMOTE UNIT**



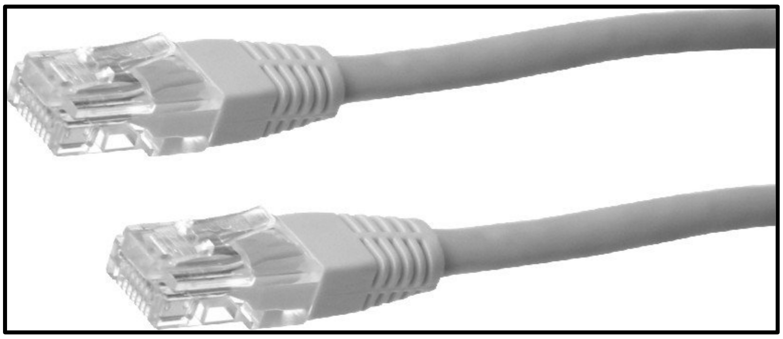
# VGA + Audio CAT5 Extender Pair



## ------------------ *CAT5 Cable*

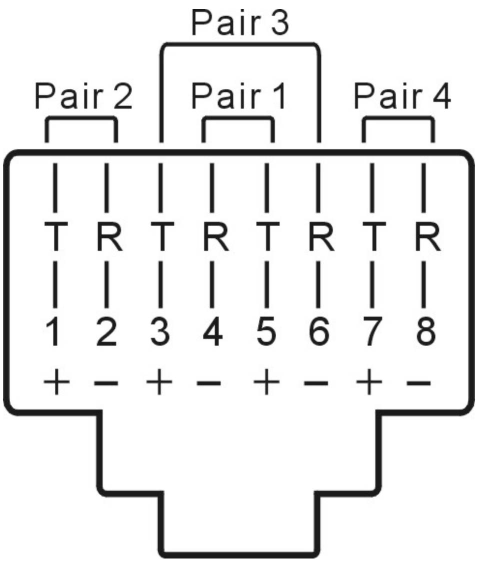
The Extender Pair requires a piece of UTP (Unshielded Twisted Pair) CAT5 cables no longer than 150 meters (490 feet).



The cable must be wired according to the EIA/TIA 568B industry standard as shown below.

| Pin | Wire Color | Pair | Function |
|---|---|---|---|
| 1 | White/Orange | 2 | T |
| 2 | Orange | 2 | R |
| 3 | White/Green | 3 | T |
| 4 | Blue | 1 | R |
| 5 | White/Blue | 1 | T |
| 6 | Green | 3 | R |
| 7 | White/Brown | 4 | T |
| 8 | Brown | 4 | R |

Note:
CAT5, CAT5e or CAT6 cables are applicable to the extender pair.

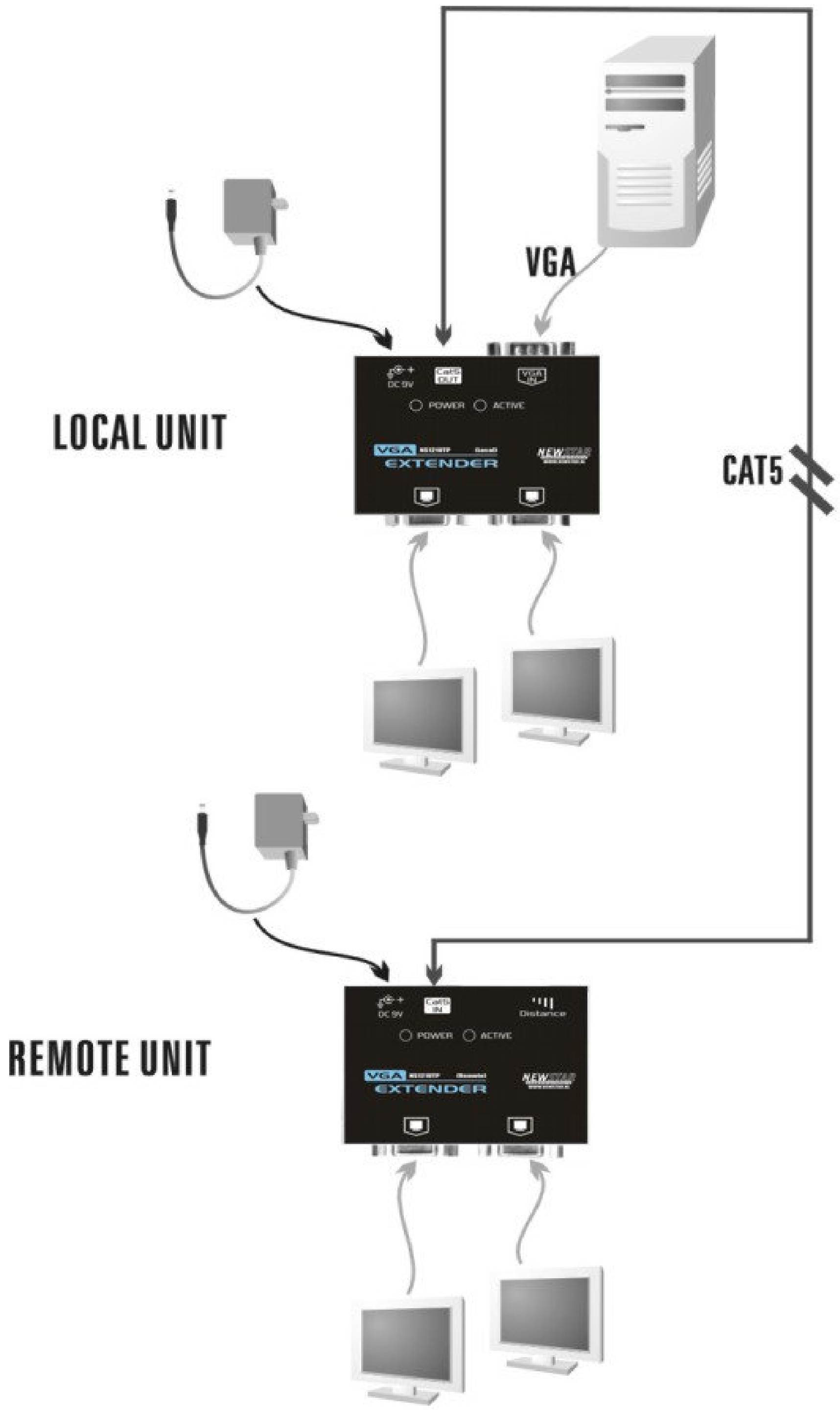



The above diagram shows the RJ45 connector of a CAT5 cable with its metal contacts facing up.

## ----------------- *Installation*

# VGA CAT5 Extender Pair

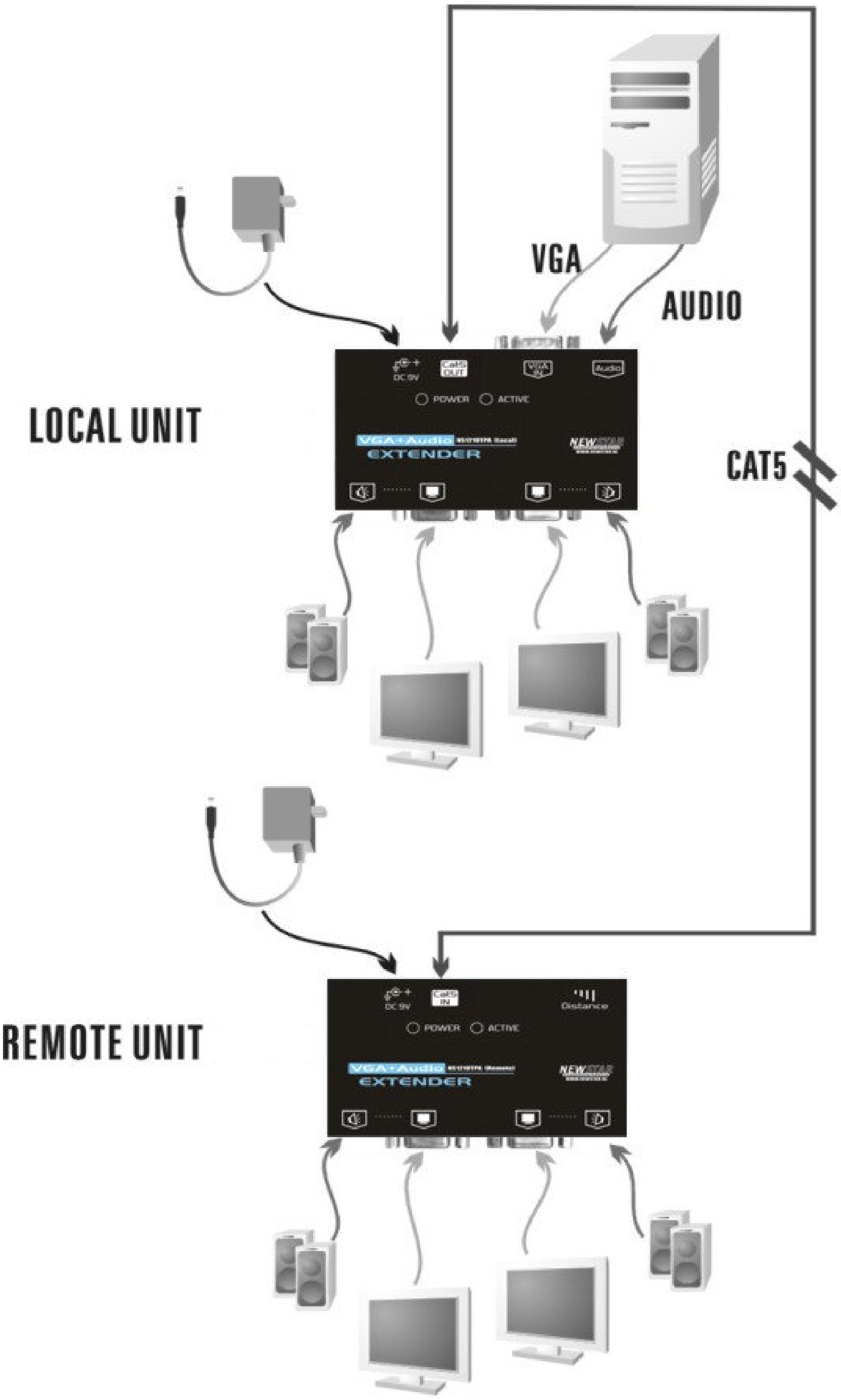
The figure indicates the complete connection. Note: Not all devices shown below are required for the pair to operate. CAT5 cable, VGA source and power supplies are required.



# VGA + Audio CAT5 Extender Pair

Note: The pair can be used for either audio or VGA signal or both.

The "VGA + Audio CAT5 Extender" accepts one stereo signal (the left and the right channels) input on an audio jack (similar to a computer). This stereo signal is broadcasted to the two local audio outputs and is "mixed" together to form a mono signal before transmitting to a Remote unit via CAT5 cable. Therefore, the left channel and the right channel audio signals at a Remote unit are the same.




After all connections are secured, you may plug in the power adapters into the power jacks of the Local and the Remote CAT5 Extender units and plug the power adapters into AC outlets.

# ---------------- *Operation*

## LED

There are two LEDs on the Local unit. The POWER LED must illuminate indicating the unit is properly powered. The ACTIVE LED illuminates when there is VGA input signals.

Likewise, the POWER LED of the Remote unit illuminates indicating the unit is properly powered. Its ACTIVE LED illuminates when VGA signals are properly decoded for the two local HDB15 VGA ports. The ACTIVE LED never turns on, if the "VGA + Audio CAT5 Extender" is used to transmit audio signals only.

## Equalizer selector

You may adjust the Equalizer selector on the Remote unit to get optimum video signal for various cable lengths. There are four segments of various lengths on the selector indicating different length of cables. The following table can be used as a reference for selecting the Equalizer.

| CAT5 cable length | | Equalizer position |
|---|---|---|
| **meter** | **feet** | |
| 0 ~ 40 | 0 ~ 131 | --- |
| 40 ~ 80 | 131 ~ 262 | ----- |
| 80 ~ 120 | 262 ~ 394 | ------- |
| 120 ~ 160 | 394 ~ 525 | --------- |

# ---------------- Appendices

## Specifications

| VGA CAT5 Extender | NS121UTP | |
|---|---|---|
| | NS121UTP (local) | NS121UTP (remote) |
| Purpose | Local unit for VGA source | Remote unit for VGA extension |
| RJ-45, CAT5 connector | Extension output for VGA | Extension input for VGA |
| Cable between units | CAT5, CAT5e and CAT6 | |
| Max. distance | 150 meters* | |
| VGA input port | HDB15 (female) x 1 | N/A |
| VGA output port | HDB15 (female) x 2 | |
| Equalizer selector | N/A | 4-position slide switch |
| Status indicator | Power (green) x 1, Active (yellow) x 1 | |
| Operating voltage | 9V DC, 600mA | |

| VGA + Audio CAT5 Extender | NS121UTPA | |
|---|---|---|
| | NS121UTPA (local) | NS121UTPA (remote) |
| Purpose | Local unit for VGA + Audio source | Remote unit for VGA + Audio extension |
| RJ-45, CAT5 connector | Extension output for VGA + Audio | Extension input for VGA + Audio |
| Cable between units | CAT5, CAT5e and CAT6 | |
| Max. distance | 150 meters* | |
| VGA input port | HDB15 (female) x 1 | N/A |
| Audio input port | Stereo jack (female) x 1 | N/A |
| VGA output port | HDB15 (female) x 2 | |
| Audio output port | Stereo jack (female) x 2 | Mono jack (female) x 2 |
| Equalizer selector | N/A | 4-position slide switch |
| Status indicator | Power (green) x 1, Active (yellow) x 1 | |
| Operating voltage | 9V DC, 600mA | |

* resolution 1600 x 1200

# ---------------- Troubleshooting

| Symptom | Solution |
|---|---|
| No VGA signals at the Remote unit. | . Both units must be powered<br>. ACTIVE LED on the Local unit and the Remote unit must illuminate indicating the signal is correct. |
| VGA signal is garbled | Make sure the wires are correctly wired inside the cable according to EIA568A or EIA568B standard. |
| ACTIVE LED at the Remote unit is always off. | . The ACTIVE LED of the Local unit must be on. Check the wirings of the CAT5 cable.<br>. Make sure the POWER LED of the Remote unit is on. |
| VGA quality changes with the change of CAT5 cables. | Use the Equalizer selector to adjust the VGA signal for various cable lengths and characteristics. |
| No audio signal at the Remote unit | Make sure the volume is high enough. |
| Audio signal at the Remote unit becomes mono. | The Local unit mixes the left/right audio signals before transmitting to the Remote unit via CAT5 cable. |

# Limited Warranty

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